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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/782,125 | 02/19/2004 | Ian Faye | 2888 | 5226 |

7590 09/06/2007
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| EXAMINER | |
| ONEILL, KARIE AMBER | |

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| ART UNIT | PAPER NUMBER |
| 1745 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/782,125 | FAYE ET AL. | |
| | Examiner | Art Unit | |
| | Karie O'Neill | 1745 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Applicant's supplemental amendment filed on June 18, 2007, was received. Claims 1-3, 5, and 12-16 were amended. Claims 6-7 have been cancelled. Claims 14-16 have been withdrawn from consideration. Therefore, Claims 1-5 and 8-13 are pending in this office action.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on February 6, 2007.

Specification

3. The amendment to the specification has been received and found to be acceptable by the examiner.

Claim Rejections - 35 USC § 103

4. Claims 1-4, 8-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US 6,586,123 B1) in view of Kirby (US 6,716,550 B1).

With regard to Claim 1, Yi et al. disclose in Figure 1, a fuel cell device, comprising a fuel cell unit (10) including at least two fuel cells (12), which are electrically connected in series and referred to as a cell stack assembly (column 3 lines 4-7) and an electronic control unit or system controller (46) for controlling individual fuel cells of said fuel cell unit and having improved characteristics rendering them suitable for use in vehicles (column 1 lines 61-63). Yi et al. disclose the fuel cells are provided with catalytic layers or coatings (column 3 lines 62-65), but do not disclose the type or amount of catalyst being used. Yi et

al. do not disclose wherein a first of said at least two fuel cells is provided with a first catalytic coating and wherein a second of at least two fuel cells is provided with a second catalytic coating different from said first catalytic coating, and wherein said at least two fuel cells have at least different quantities of the catalytic coatings.

Kirby discloses a fuel cell stack comprising at least two fuel cells having an anode layer and a cathode layer comprising different catalytic compositions. The first fuel cell of the stack is provided with a first catalytic coating on either the anode or the cathode and the second fuel cell of the fuel cell stack is provided with a second catalytic coating on either the cathode or the anode. The electrocatalyst in the catalyst layers may be a metal black, an alloy or a supported metal-based catalyst, for example platinum or carbon particles. The anode catalyst layer and the cathode catalyst layer typically comprise different catalytic compositions, such as, different catalysts and/or different amounts of catalyst on each of the anode and cathode layers (column 3 lines 26-29). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use different catalytic coatings and different quantities of catalyst in the fuel cell of Yi et al., because Kirby teaches different catalytic reactions occurring during operation of the fuel cell at the anode and the cathode, which would require different catalysts and different quantities of the catalysts (column 3 lines 32-37).

With regard to Claims 2-4, Yi et al. disclose the electronic control unit (46) including at least one control element for controlling material streams of individual ones of fuel cells, primarily the control element being formed as a control valve (34) operable to regulate the pressure of the fuel reactant as it enters the anode. It is the position of the examiner that the control element being arranged between two of said fuel cells, are inherent, given that

the control elements disclosed by Yi et al. and the instant application have similar material properties. A reference that is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

With regard to Claims 8-9, Yi et al. disclose at least one pressure generating unit for generating at least two different operational pressures. The pump or blower (32) used to pressurize air oxidant is variable and connected with the controller (46). The pump (30) establishes a predetermined coolant water pressure in the coolant stream. The reactant gas streams typically have a greater pressure than the coolant gas stream (column 4 lines 4-12).

With regard to Claim 10, Yi et al. disclose wherein the fuel cell unit is formed to provide an operation for supplying current (column 5 lines 1-17).

With regard to Claims 12 and 13, Yi et al. disclose in Figure 1, a fuel cell device, comprising a fuel cell unit (10) including at least two fuel cells (12), which are electrically connected in series and referred to as a cell stack assembly (column 3 lines 4-7) and an electronic control unit or system controller (46) for controlling individual fuel cells of said fuel cell unit and having improved characteristics rendering them suitable for use in vehicles (column 1 lines 61-63).

5. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US 6,586,123 B1) in view of Kirby (US 6,716,550 B1), as applied to Claims 1-4, 8-10 and 12-13 above, and in further view of Menon et al. (US 2004/0146758 A1).

Yi et al. and Kirby disclose the fuel cell device in paragraph 4 above, but do not disclose wherein at least two of said fuel cells are provided with different maximum electrical powers and wherein said fuel cell unit is formed so as to provide an operation for supplying heat.

Menon et al. disclose a fuel cell device wherein at least two of said fuel cells are provided with different electrical powers, the secondary fuel cell (40) is designed to operate differently from the primary fuel cell (22), for example, having different efficiencies or maximum powers (paragraph 0022), and wherein the fuel cell unit is formed so as to provide an operation for supplying heat as is provided by all exothermic reactions. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use two fuel cells formed to provide different electrical powers and for supplying heat with the stack assembly of Yi et al. and Kirby, because Menon et al. teach the use of the primary cell to provide the primary electrical load and the secondary cell provides a lower power to a load which requires less operating power (paragraph 0022) and converting anode effluent into heat that can be used in other parts of the stack (paragraph 0005).

Response to Arguments

6. Applicant's arguments have been fully considered but they are not persuasive.

Applicant's principal arguments are:

(a) The language "fuel cell elements" was amended to recite "fuel cells" in order to distinguish over the first and second "fuel cell elements" representing an anode and a cathode of a fuel cell.

In response to Applicant's arguments, please consider the following comments:

(a) The claim language of Claim 1 recites wherein a first fuel cell is provided with a first catalytic coating and a second fuel cell is provided with a second catalytic coating different from the first catalytic coating. The prior art still reads on these claims because the catalytic coating of the anode of a first fuel cell can be and is different than the catalytic coating of the cathode of a second fuel cell.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karie O'Neill
Examiner
Art Unit 1745

MARK RUTHKOSKY
PRIMARY EXAMINER

Mark Ruthkosky
8/27/07

KAO